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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,439

03/23/2004

Noritaka Takahata

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12/28/2007

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EXAMINER

ROE, JESSEE RANDALL

ART UNIT

PAPER NUMBER

1793

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/806,439	Applicant(s) TAKAHATA ET AL.	
	Examiner Jessee Roe	Art Unit 1793	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of the Claims***

Claims 1-8 are pending wherein claims 1-2 and 4 are amended.

### ***Status of Previous Rejections***

The previous rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Meetham (US 4,459,160) is withdrawn in view of the Applicant's amendments to the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcia et al. (US 4,140,555).

In regards to claim 1, Garcia et al. ('555) disclose a nickel-based heat resistant Alloy (col. 1, lines 7-18 and col. 1, line 59 – col. 2, line 25). A comparison of the alloy disclosed by Garcia et al. ('555) with that of the instant invention is shown in the table on the following page.

Element	From Instant Claims (weight percent)	Garcia et al. ('555) (weight percent)	Overlapping range (weight percent)
C	0.10-0.50	0.01-0.25	0.10-0.25
Si	0-1.0	0	0
Mn	0-1.0	0	0
Cr	5.9-10.0	7.0-25.0	7.0-10.0
Al	2.0-8.0	0.2-7.0	2.0-7.0
Co	0-15.0	0-25.0	0-15.0
W	8.0-16.0	0-13.0	8.0-13.0
Ta	2.0-8.0	0-6.0	2.0-6.0
Ti	0-3.0	0.2-6.0	0.2-3.0
Zr	0.001-0.20	0-0.2	0.001-0.20
B	0.005-0.30	0-0.15	0.005-0.15
Ni	balance	balance	balance

The Examiner notes that the composition of the nickel-based alloy of Garcia et al. ('555) overlaps the composition of the instant invention, which would be a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the desired amounts of carbon, chromium, aluminum, cobalt, tungsten, tantalum, titanium, zirconium, and boron from that of Garcia et al. ('555) because Garcia et al. ('555) disclose the same utility (heat resistant nickel-based alloys) throughout the disclosed ranges.

In regards to the claim language, the phrase "up to" indicates that the presence of that particular element would be optional. In this case silicon, manganese, cobalt, and titanium would all be optional elements according to claim 1.

In regards to the language "consists of" as recited in claim 1, Garcia et al. ('555) disclose the use of a carbide shape controller selected from 0.022 to 0.15 weight percent magnesium, 0.005 to 0.10 weight percent calcium, and mixtures thereof (col. 1,

lines 30-55). Garcia et al. ('555) further disclose using magnesium as a deoxidizer and desulfurizer; using lime (source of calcium) to reduce sulfur content (col. 2, lines 63-69); and that the grain would be more coarse without the carbide shape controller (col. 4, lines 6-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to omit the calcium and/or magnesium from the nickel-base alloy, as disclosed by Garcia et al. ('555) where deoxidation, desulfurization, and fine grain size would not be required or desired. MPEP 2144.04 (II)(a).

Still regarding claim 1, Garcia et al. ('555) disclose the presence of carbides in the nickel-based alloy but is silent to the area percentage thereof (col. 4, lines 6-12). Garcia et al. ('555) is also silent with respect to the area percentage of  $\gamma/\gamma'$  eutectoid. However, the Examiner asserts that the nickel-base alloys disclosed by Garcia et al. ('555) would inherently have the claimed eutectoid area percentage and the claimed carbide percentage because the alloys have substantially the same composition and the substantially the same processing (casting). MPEP 2112.01 I.

With respect to the formula in claim 1, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. In re Austin, et al., 149 USPQ 685, 688. It would have been

obvious to one of ordinary skill in the art to select the desired amounts of nickel, chromium, titanium, aluminum, cobalt, tantalum, tungsten, and zirconium from the ranges disclosed by Garcia et al. ('555) because Garcia et al. ('555) disclose the same utility (heat resistant nickel-based alloys) throughout the disclosed ranges.

In regards to claims 2 and 4, Garcia et al. ('555) disclose a nickel-based heat resistant alloy (col. 1, lines 7-18 and col. 1, line 59 – col. 2, line 51). A comparison of the alloy disclosed by Garcia et al. ('555) with that of the instant invention is shown in the table below.

<b>Element</b>	<b>From Instant Claims (weight percent)</b>	<b>Garcia et al. ('555) (weight percent)</b>	<b>Overlapping range (weight percent)</b>
C	0.10-0.50	0.01-0.25	0.10-0.25
Si	0-1.0	0	0
Mn	0-1.0	0	0
Cr	5.9-10.0	7.0-25.0	7.0-10.0
Al	2.0-8.0	0.2-7.0	2.0-7.0
Co	0-15.0	0-25.0	0-15.0
W	8.0-16.0	0-13.0	8.0-13.0
Ta	2.0-8.0	0-6.0	2.0-6.0
Ti	0-3.0	0.2-6.0	0.2-3.0
Zr	0.001-0.20	0-0.2	0.001-0.20
B	0.005-0.30	0-0.15	0.005-0.15
Ca	0-0.01	0.005-0.1	0.005-0.01
Ni	balance	balance	balance

The Examiner notes that the composition of the nickel-based alloy of Garcia et al. ('555) overlaps the composition of the instant invention, which would be a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the desired amounts of carbon, chromium, aluminum, cobalt, tungsten, tantalum, titanium, zirconium, boron,

and calcium from that of Garcia et al. ('555) because Garcia et al. ('555) disclose the same utility (heat resistant nickel-based alloys) throughout the disclosed ranges.

In regards to the claim language, the phrase "up to" indicates that the presence of that particular element would be optional. In this case silicon, manganese, cobalt, and titanium would all be optional elements according to claim 2.

Still regarding claims 2 and 4, Garcia et al. ('555) disclose the presence of carbides in the nickel-based alloy but is silent to the area percentage thereof (col. 4, lines 6-12). Garcia et al. ('555) is also silent with respect to the area percentage of  $\gamma/\gamma'$  eutectoid. However, the Examiner asserts that the nickel-base alloys disclosed by Garcia et al. ('555) would inherently have the claimed eutectoid area percentage and the claimed carbide percentage because the alloys have substantially the same composition and the substantially the same processing (casting). MPEP 2112.01 I.

With respect to the formula in claims 2 and 4, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin, et al.*, 149 USPQ 685, 688. It would have been obvious to one of ordinary skill in the art to select the desired amounts of nickel, chromium, titanium, aluminum, cobalt, tantalum, tungsten, and zirconium from the

ranges disclosed by Garcia et al. ('555) because Garcia et al. ('555) disclose the same utility (heat resistant nickel-based alloys) throughout the disclosed ranges.

Still regarding claim 4 and in regards to claim 3, Garcia et al. ('555) do not necessitate the addition of iron copper, sulfur, and phosphorus. Also, Garcia et al. ('555) do not necessitate the presence of vanadium or molybdenum because Garcia et al. ('555) disclose 0 to 1.5 weight percent vanadium and 0 to 10 weight percent molybdenum (col. 1, line 58 - col. 2, line 25).

In regards to claims 5-8, Garcia et al. ('555) disclose making articles such as turbine wheels (col. 1, lines 7-18 and col. 4, lines 39-55).

Still regarding claims 5-8, the Examiner considers the recitation "for automobile engines" an intended use of the turbine wheel which would not further limit the structure of the turbine wheel. MPEP 2111.02 II.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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JR

  
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